

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
15 April 2004 (15.04.2004)

PCT

(10) International Publication Number
WO 2004/031740 A2

(51) International Patent Classification⁷: **G01N 17/04**,
17/00, 17/02

(21) International Application Number:
PCT/GB2003/004222

(22) International Filing Date:
30 September 2003 (30.09.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0222656.1 1 October 2002 (01.10.2002) GB

(71) Applicant (for all designated States except US): **BAE SYSTEMS PLC** [GB/GB]; 6 Carlton Gardens, London SW1Y 5AD (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **HARRIS, Steven**,

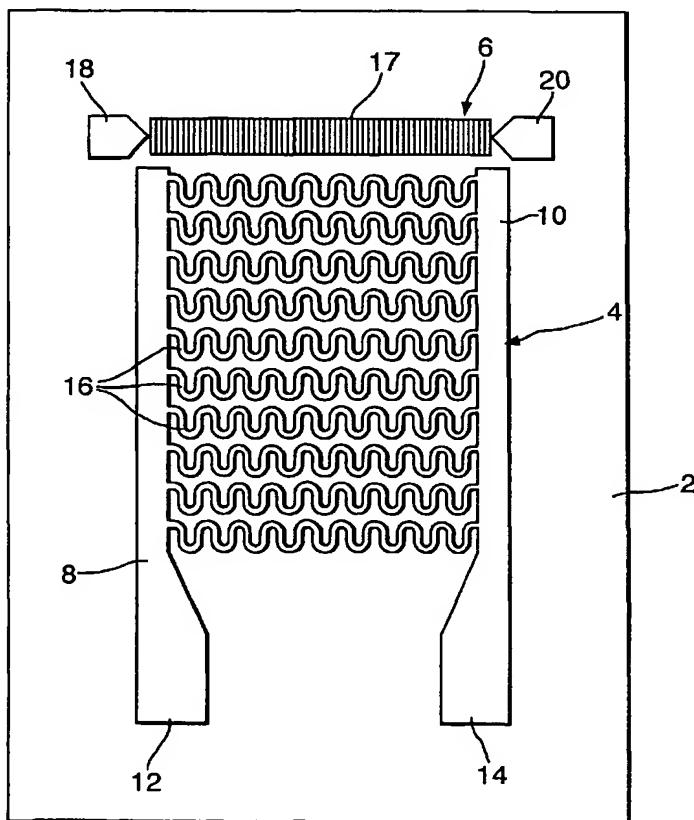
John [GB/GB]; BAE Systems ATC, SRC FPC 267, New Filton House, Filton, Bristol BS99 7AR (GB). **HEB-BRON, Michael, Christopher** [GB/GB]; BAE Systems ATC, SRC FPC 267, New Filton House, Filton, Bristol BS99 7AR (GB). **STURLAND, Ian, Michael** [GB/GB]; BAE Systems ATC, SRC FPC 267, New Filton House, Filton, Bristol BS99 7AR (GB).

(74) Agent: **GROUP IP DEPARTMENT**; BAE Systems plc, Lancaster House, P.O. Box 87, Farnborough Aerospace Centre, Farnborough, Hampshire HU14 6YU (GB).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

[Continued on next page]

(54) Title: CORROSION SENSING MICROSENSORS



(57) **Abstract:** A microsensor for detecting corrosive media acting on a bulk metallic material when mounted in situ adjacent a location in the bulk metallic material. The microsensor includes a plurality of corrosive tracks (16; 132; 21613) exposed to the corrosive media, each said corrosive track being formed as a patterned conductive thin film track. The tracks follow serpentine paths which include a plurality of bends, at least two of which are of opposite curvature, to provide a high degree of miniaturisation coupled with accurate and reliable corrosion sensing characteristics. The corrosive tracks may be formed from an alloy material, such as an aluminium alloy, to mimic the corrosive characteristics of a bulk metallic alloy and to provide improved corrosion detection for components made from such materials at high degrees of miniaturisation.



(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.